

INFILL BY PLANNED UNIT DEVELOPMENT — A GROWTH MANAGEMENT TECHNIQUE
FOR MANHATTAN, KANSAS?

by

Barbara Haynes-Blaylock
B.S., Emporia State University, 1981

A MASTER'S REPORT
submitted in partial fulfillment of
the requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

College of Architecture and Design

KANSAS STATE UNIVERSITY
Manhattan, Kansas
1987

Approved by:

Ray B. Weisenburger
Major Professor

2.045
.R4
PLAN
1987
H39
C.2

TABLE OF CONTENTS

A11207 301864

	Page
LIST OF FIGURES.....	111
CHAPTER	
1. INTRODUCTION.....	1
2. WHAT IS INFILL?.....	3
Infill Defined.....	3
Benefits of Infill.....	4
Trends Favoring Infill.....	7
Infill Constraints.....	12
Market Factors Affecting Infill.....	20
Optimum Infill Site.....	20
Adverse Affects of Infill.....	23
Changing Attitudes Toward Infill.....	24
Manhattan's Infill Opportunities.....	27
3. INFILL AND THE CITY OF MANHATTAN.....	28
Planning in Manhattan.....	28
Growth Management.....	30
Growth Guidance.....	31
Planned Unit Development Concept.....	31
Manhattan's PUD Ordinance.....	33
4. PUD INFILL PROJECTS IN MANHATTAN.....	37
Westwood Village PUD.....	38
The Orchard PUD.....	41
Hummel Estates PUD.....	44
First National Bank Center PUD.....	48

	Page
5. IMPROVING INFILL POTENTIAL.....	52
Encouraging Infilling.....	52
Stimulating Developers Interest.....	53
Removing Governmental Obstacles.....	54
Neighborhood Support.....	57
Addressing Market Weakness.....	58
Correcting Site Specific Problems.....	59
Increasing Available Lands.....	61
Correcting Infrastructure Problems.....	62
6. CONCLUDING REMARKS.....	64
Manhattan's Infill Potentials.....	64
END NOTES.....	67
BIBLIOGRAPHY.....	74

LIST OF FIGURES

Figure	Page
2.1: Trends Encouraging Infill Development.....	8
2.2: Factors Affecting Infill Potential.....	21
2.3: The Optimum Infill Site.....	22
2.4: Re-Subdivision of Single Family Lots & Flag Lots.....	26
3.1: Purpose and Objectives — Manhattan PUD Ordinance.....	34
3.2: Minimum Parcel Size Requirements for Planned Unit Developments.....	36
4.1: Locational Map — Westwood Village PUD.....	39
4.2: Site Plan — Westwood Village PUD.....	40
4.3: Locational Map — The Orchard PUD.....	42
4.4: Site Plan — The Orchard PUD.....	43
4.5: Locational Map — Hummel Estates PUD.....	45
4.6: Site Plan — Hummel Estates PUD.....	46
4.7: Locational Map — First National Bank Center PUD.....	49
4.8: Site Plan — First National Bank Center PUD.....	50
5.1: Techniques for Streamlining Land Use Regulations.....	56

ACKNOWLEDGEMENTS

I would like to thank the members of my committee and all the Regional and Community Planning staff for their help and assistance in this paper. This paper is dedicated to my father and mother, Lacy and Barbara Haynes, without whose love and support, none of this would have been possible.

CHAPTER 1

INTRODUCTION

Urban sprawl, in recent years, has spurred the spread of growth management techniques throughout the United States. Growth management in return has helped awaken both communities and developers to infill development opportunities. Due to the increasing limited liability of developers to provide services at the urban fringes, caused by higher governmental standards, regulatory delays and service fees, escalating land prices, pressures to preserve prime agricultural lands and environmentally sensitive lands, urban sprawl is now losing its attractiveness. Infill goals are becoming a basic tenant in many growth management policies. It is becoming apparent that both communities and developers are taking a long, hard look at infill development as it is now becoming a feasible alternative to suburban fringe development. Infill can and is being utilized today as an anti-sprawl measure and as an essential tool for growth management practices.

Infill development is not a new land use technique, but the interest in infill development is new. Infilling is a land use technique that can be utilized as a component of a growth management system. The promotion of infill development is a means of discouraging urban sprawl, while at the same time, stimulating efficient, economic use of existing urban resources.

This paper will explore the concept of infill, noting both the good and bad effects created by infilling. The benefits of infill, such as agricultural preservation, energy conservation and neighborhood

enhancement will be explored. Trends that are now emerging that encourage infilling, markets that favor infill, as well as the constraints that face infill will also be discussed.

The city of Manhattan has been involved in growth management practices for a number of years. Manhattan's growth management policies will be examined and the Planned Unit Development Ordinance (PUD) and how it can apply to growth management as well as infilling. A number of selected PUD sites will be examined in order to exemplify how the ordinance can be utilized to achieve infilling.

The conclusion of this paper will explore a number of techniques and tools that might be utilized to improve infilling potentials. The final summarization will suggest what the city of Manhattan might do in order to make infilling a more viable development alternative. The potentials for infill development are becoming great, as growth management practices gain more support and communities are becoming aware of the benefits of infill.

CHAPTER 2

WHAT IS INFILL?

INFILL DEFINED

Infill appears to not fit a tight description. As a concept, it has been used for many purposes and can be applied to a variety of urban or built environments. The Urban Land Institute and the Real Estate Research Corporation loosely define infill as the "... process of developing those parcels bypassed during the normal course of urbanization" (1). Charles Abrams, in his book of urban definitions The Language of Cities, defines infill as building ... on scattered sites ... in a built-up section of a city where sites are vacant either because the structures formerly on them were demolished or because they remain underdeveloped where the adjoining buildings were erected" (2). Another definition, yet related to those previously mentioned, is that of Deborah Brett's "... the economic use of vacant land in urban areas where water, sewer and other public services are already in place" (3).

While infill is defined in a variety of different ways, the logic behind the theory is that infill is a means of development where the infrastructure systems currently exist while at the same time avoiding urban sprawl. Infill cannot accommodate the greater bulk of community growth, but it can provide a reliable alternative (4). Infill development can accommodate a significant share of residential and commercial demand in our cities, yet at the same time, this will require a re-examination of local policies and administrative procedures (5). Local governments can look toward infill "as a way of

reducing infrastructure investments, improve the tax base and as a means toward restoring declining neighborhoods, while developers can capitalize on the locational advantages of sites close to and within existing commercial and residential areas" (6).

The United States Department of Housing and Urban Development (HUD) sponsored a study of state urban strategies in 1982 that revealed a focus on growth management by concentrating on two basic strategies. The first is that of controlling sprawl and the second is that of protecting environmentally sensitive areas (7). These two objectives have, and still are, being incorporated into infill development, growth management and agricultural preservation policies. Communities throughout the United States are exploring the concept of infilling as a technique for community development.

BENEFITS OF INFILL

While infill development cannot accommodate all future growth, it can become an essential tool for growth management. There are a number of benefits of infill that the need for growth management has awakened cities to in recent years. There are eight dominant public benefits from the development of infill sites that are to be discussed here. They are: 1) the preservation of agricultural and sensitive lands; 2) the reduction of land costs; 3) energy conservation; 4) support of existing neighborhoods; 5) reduced duplication of public facilities; 6) increased tax revenues for local governments; 7) reduced transportation time and costs; and 8) the reduction of urban sprawl. The following is a closer look at these benefits of infilling.

1. Agricultural Preservation. The first benefit of infill development is the preservation of agricultural lands and environmentally sensitive areas. The preservation of agricultural lands and environmentally sensitive areas is rapidly becoming a major component of many community goals as can be seen through the widespread establishment of growth management policies. The use of both infill techniques and other growth management policies should help in the struggle to preserve large quantities of such lands (8).

2. Reduction of Land Costs. Land costs are ever increasing, especially at the urban fringe as cities continue to expand. Developers claim that the high cost of land at the urban fringes is increasingly making fringe development more and more difficult. Developers also claim that one of the main reasons that infill sites have been neglected is the high cost of land within urban areas (9). Yet today, with increasing land cost at the urban fringes, the high cost of land within cities may be offset by allowing higher densities of development than normally permitted on the urban fringe, thus lowering the per unit cost.

3. Energy Conservation. The conservation of energy can be achieved through the increased use of attached housing and planned developments on infill sites (10). Infill sites provide excellent opportunities to conserve energy while at the same time providing adequate living and working spaces within the urban boundaries. Developments should be well planned and carefully designed in order to ensure that the development blends in with the existing surroundings.

4. Neighborhood Support. Another benefit of infilling is that of supporting the existing neighborhood. While infilling may face neighborhood opposition, it may well also strengthen the older, deteriorating areas by improving the physical and social appeal of the area (11).

5. Reduction of Infrastructure Costs and Increased Taxes. The reduction of duplication of public facilities, such as sanitary sewer, water and storm sewer, is beneficial to all citizens of a community, as are the increased tax revenues generated by building on infill sites (12). The utilization of existing infrastructure systems (if applicable) decreases future expansion needs at the urban fringe and at the same time increasing the tax values generated once those sites are developed.

6. Reduced Transportation Costs. The utilization of sites within the urban proximity creates a benefit for the public by reducing transportation costs and commuting times for the public (13). The utilization of urban sites offers the public a closer proximity to inner city-working and social activities while at the same time reducing transportation times and costs, thus conserving energy.

7. Reducing of Urban Sprawl. The last, yet one of the most important benefits of infill development, is the reduction of urban sprawl. By accommodating the demand for new housing, commercial and office facilities on infill sites, urban sprawl can be lessened (14). As stated before, infill development cannot meet the demands of future growth, but it is a viable and useful technique to curb the rate of urban expansion.

TRENDS FAVORING INFILL

There are a number of trends that have emerged in recent years that have caused a focus on the need and idea of compacting urban areas, reducing the cost of sprawl and encouraging infill development. Infilling is not new, but the scale of interest in it is. Infill is usually market driven, that is, changing demographics and conditions can create opportunities for it (15). Figure 2.1 is a list of a number of current trends that favor infill (16).

There are a number of more recent changes in real estate development that favor infilling, such as the increasing vitality in older areas, historic preservation, gentrification and mixed-use concepts that are becoming more and more popular today (17).

Market trends that favor infill include such as the inability to find suitable sites for subdivision development at the urban fringe, the difficulty in obtaining permits and utility extensions, the rising costs of acquiring and preparing new land and the increasing number of persons who seek close-in living quarters and work places (18).

The older areas of communities usually hold the key institutions such as hospitals, universities, cultural activities, historical buildings, museums, etc. These facilities, along with changing market considerations, have been the catalyst for spurred development of vacant or inefficiently used land, or what has been called the "back to the city" movement (19).

Of the many trends that have emerged recently that favor infill development, there are nine that are of major significance. These are: 1) property tax limitations; 2) suburban growth controls; 3)

Figure 2.1: Trends Encouraging Infill Development

1. Traffic congestion and high energy costs.
2. Limited capability of government to expand infrastructure systems at the urban fringe.
3. High cost of land preparation at the urban fringe.
4. Interest in public transit areas.
5. Rising local government need for tax base expansion.
6. Strengthening service economy in urban core.
7. Fewer child-oriented families.
8. Interest in accessibility to urban amenities.
9. Expanding multi-use nodes in cities.
10. Increased scrutiny of public ownership of land.
11. Pressure to preserve agricultural lands.
12. Need to maximize in-use utilities.
13. Strengthening of older neighborhoods.
14. Capitalizing on development opportunities that do not require large capital expenditures.

Source: Eric Smart, Making Infill Projects Work (Washington, D.C.: Real Estate Research Corporation and The Urban Land Institute.

changing demographics; 4) governmental funding; 5) the absence of competition in inner-city neighborhoods; 6) the availability of financing and insurance; 7) energy considerations; 8) the increasing role of the private sector in city planning; and 9) the increased public sector understanding of market techniques.

1. Property Tax Limitations. Limitations on tax increases or tax rollbacks reduce the ability of governments to pay for utility costs, thus developers must usually bear the cost of development. The developers, through site dedications, annexation fees, utility connections and building fees are forced to bear these costs. In return, they pass them on to the buyer in the form of consumer fees. These rising consumer costs have brought about a realization of the potential for infill on sites where the infrastructure and utilities are already in existence (20). By reducing new capital improvements and maintenance burdens, the use of in-place infrastructures should save tax dollars. The existing water, sewer, schools, libraries, roads, etc., offer developers a way to lower front end capital costs and delays (21).

Increasingly, bond issues for new facilities and the taxes to maintain them are being turned down by voters in what has been referred to as the "tax payers revolt" (22). This trend is increasingly drawing development to already serviced areas as a means of spreading out already high maintenance costs.

2. Suburban Growth Controls. The increasingly limited ability on the part of developers at the urban fringe to provide serviced lots, combined with escalating land prices and pressures to preserve

agricultural lands, has caused urban sprawl to loose its attractiveness. Federal policies have also influenced the disattractiveness of urban sprawl (23). Money shifts have been made to repairs, maintenance and mass transit systems with the virtual completion of the interstate highway system. Also, the Environmental Protection Agency has reduced funds to sewage and treatment plants and tightened regulations regarding hook-ups (24). Such growth control measures as these have slowed growth at the urban fringes and opened the door to infill opportunities.

3. Changing Demographics. Changing demographic trends in recent years is one of the strongest factors influencing residential infill. The baby boom generation is now in the house buying age and the family trend is towards more single families and families with fewer children (25). In 1950 the median hosuehold size was 3.42 and by 1980 that figure had decreased to 2.75 persons per household. This trend of decreasing household size has brought about more adult households with fewer children and a greater portion of high income households, thus leading to a rediscovery of older neighborhoods and a renewed interest in urban living (26).

Residential infill sites are absorbed by two principal markets. The first is older couples seeking luxury and security and the second is young professionals, singles or couples, looking for convenient, close-in locations to both work and social environments (27).

4. Governmental Funding. Governmental funding opportunities are making older areas more attractive for infilling. Such funds as Community Development Block Grants (CDBG's), Small Business

Administration and Economic Development Administration loans and grants are being utilized to finance infill opportunities (28).

5. Inner-City Voids. The movement in recent decades of retail and manufacturing facilities to the suburbs has left voids in city cores, thus creating an absence of competition in inner-city neighborhoods (29). There is still an abundance of labor, although skill levels may have to be dealt with and wage rates are becoming compatible with suburban wages which are again creating opportunities for retail and residential infill in inner-city areas. The infusion of infill projects into older neighborhoods can, in return, strengthen and reinforce the inner-city areas, thus reinforcing these areas that have declined in past years. Thus, property values are also increased along with the social appeal of the area.

6. Financing. The lack of availability of financing from banks unwilling to lend in high risk areas and the inability to obtain insurance have been barriers to urban development in the past (30). Regeneration of these older areas, through infilling, can help to eliminate these obstacles through innovative land use and financing techniques, and changing demographic trends drawing persons back to urban areas.

7. Energy Savings. Energy related issues, such as the increasing price of gasoline, have increased public awareness of energy considerations (31). The use of public transit systems has increased slightly and should continue to increase as energy costs continue to go up. Infilling in many cases offers opportunities for energy savings

through the utilization of innovative techniques such as attached housing.

8. Private Sector Involvement. There is an ever increasing role of the private sector in city planning today. Communities are becoming involved with citizen groups and joint public/private ventures are becoming more and more popular (32). Infilling provides an ideal opportunity for public/private ventures as citizens become more involved in community planning.

9. Marketing Techniques. Local governments are becoming more sophisticated in marketing techniques and are striving to increase the public sector's understanding of these techniques (33). Infill opportunities can be capitalized on as private developers become more aware of the potentials of infill development. These opportunities develop out of a combination of changing market and development economics and development decisions should reflect this outlook towards future changes (34). The spread of growth management has caused an awakening towards infill opportunities and a chance for communities and developers to respond to new or changing markets.

INFILL CONSTRAINTS

While there are a number of trends that have recently emerged that favor infilling, there are also a number of constraints and reasons why infill opportunities have been neglected in the past.

According to a 1971 study conducted of 86 cities across the United States, 20-25% of the land sampled was vacant. Of that land, 80% was found to be developable (35). Over 90% of potential infill sites were

located outside the core in well maintained areas (36) and suburban infill sites were usually larger than inner-city sites (37).

Yet, many infill sites are vacant for valid reasons, ranging from the physical condition of the site to the social issues related to the site, such as crime, race or blight. The following sections provide a brief look at a number of the outstanding reasons why infill development opportunities have been neglected.

1. Inadequate Infrastructure Systems. Inadequate capacity and conditions of existing public facilities may be found to be a problem in many urban areas (38). Many sewer, water and storm sewer, etc., infrastructure systems are reaching their capacities or are aging to the point where maintenance costs are equal to those of a new system. There is growing concern that central city infrastructure systems are decaying. Capital improvement dollars in maintenance are low and infrastructure systems can no longer support existing facilities, let alone any infilling within. The physical capacity and condition of these major capital expenditures should be checked carefully and maintenance should be enhanced to ensure the viable life of infrastructure systems.

3. Neighborhood Character. In many areas where the infrastructure systems are perceived as poor or inadequate, this is not the case. Infrastructure systems may be perceived as being inferior in quality due to the physical appearance of the neighborhood (39). The poor physical and/or social image and appearance of a neighborhood can bring upon an image that the infrastructure system, like the area, is of inferior quality.

3. Public Attitudes. Another detriment to infill is the willingness on the part of both developers and consumers to assume the costs of urban fringe development (40). In recent years there has been a shift from public to private charges for infrastructure systems, development costs and installation costs on the urban fringe. Developers in return have passed these costs onto the consumers who, spurred by the two-worker family and the "American Dream" of single family housing, have been willing to pay the rising costs of suburban development (41). These attitudes are beginning to change today, but they will be slow to come about.

4. Lack of Facilities and Services. The lack of coordination in facilities planning and service provisions leads to partially serviced areas, which is another hurdle to infill development (42). Without a centralized agency with planning and capital improvement programming responsibilities, infill is hard to encourage. Many infill projects are high risk. There must be a firm understanding of what has held back development previously and what market conditions exist to make development feasible. Without a centralized agency to examine these issues and assess what can be done to offer development opportunities that will meet community goals, infilling will continue to be passed over (43).

5. Land Holding. Factors that encourage speculation are another cause of problems with infill sites. Private land owners are encouraged to withhold land in hopes of future (higher) land values by the very nature of the property tax system which undervalues vacant land (44). A problem in central cities and older neighborhoods, where land values

have fallen, is that land owners are hesitant to sell unless they can recover their investment cost and achieve capital gains. It has been suggested that site tax valuation--taxing only the land, not the improvements--might be a partial solution to this problem. In Australia and New Zealand, where this has been used, development patterns appear to be more compact and land use more efficient (45). Another alternative, possibly more feasible in the U.S., would be higher assessment of vacant land and/or more frequent reassessment of land.

The corporate holding of vacant lands for future expansion or relocation may also be a detriment to infill development. Studies show that the majority of vacant parcels are owned by corporations for some type of future use (46).

6. Tax Delinquency. Tax delinquencies may provide another hurdle to infill development. Although many parcels have low sale prices, title searches may reveal unpaid taxes greater than the market value of the property (47). This may reduce the attractiveness and feasibility of future development. Other title problem such as tax liens, questions of ownership or the inability to obtain title insurance may also deter from infill opportunities (48).

7. Fragmented Ownership. Although large parcels of land may exist within a given infill area, fragmented ownership may prove to be a barrier to development. In some cases, the re-use of land is not feasible unless a large site can be assembled. This may be very time consuming and more expensive than feasible for development (49). Individual owners have many motives for holding land from personal use

to future expansion and most are reluctant to sell without achieving substantial capital gains.

8. Ineffective Marketing. Ineffective marketing may also hide potential infill sites. Most public agencies and private consumers lack the necessary skills to properly market land (50). With suburbanization still in full swing, marketing of suburban sites is easier than inner-city urban sites, lost in the configurations of development.

9. Improper Pricing. Another issue closely related to marketing is improper pricing. Economics dictate that the closer to the city core the higher are the rent and sale values of the land. Thus, developers are attracted to the suburban areas. The risks of urban infill or the costs of land must be lowered in order to stimulate development. Small or irregular lots are hard to develop. While economic trade-offs are higher as you move towards the core, it is possible for higher land prices to not be a detriment to development, but limit the type of development (52). Infill projects that maximize the use of existing infrastructure systems, with minimal site costs, may have development costs similar to those at the urban fringe. Developers and consumers should look closely at the trade-offs associated with urban and suburban sites and carefully weigh the overall costs of development.

10. Lack of Coordination. The lack of coordination of centralized information concerning infill sites is a major problem in many communities today. In order for the proper analysis, mentioned above, communities should have (or establish) coordinated land

information systems for the joint use of both public officials and private developers (53).

11. Improper Zoning. Improper zoning may also be a detriment towards infilling. Many areas may be zoned for uses not needed in a particular area (54). For example, if an area is zoned for commercial development, the owner may not want to down-zone the land because of a decrease in land values, and the hope of potential future commercial development. In areas of weak markets, down-zoning has been suggested as a way of reducing artificially high land prices (55). Unfortunately, down-zoning is easily associated with spot zoning, a touchy legal issue that most developers and communities shy away from in today's era of courtroom battles.

12. Inflexible Community Goals. Inflexible or unrealistic community plans for an area may be a detriment to potential infilling. Many areas have been targeted for urban renewal projects that today may no longer be feasible, but there is an unwillingness on the part of governmental bodies to change community goals (56). Community goals should periodically be updated in order to reflect current community attitudes.

13. Regulatory and Administrative Procedures. A major obstacle to infill development is regulatory procedures and bureaucratic delays encountered by developers. Although possibly a false presumption, many developers believe that building codes, subdivision regulations, etc. are less at the urban fringe (small governmental units) than at city cores (large governmental units) (57). Many larger communities have multiple departments, which developers perceive as a hassle for

small developments versus large suburban developments. Developers usually encounter problems with local neighborhoods that resist infill and the longer a proposal is pending with multiple departments and cumbersome regulatory procedures, the more time for the opposition to gain support (58). Developers usually feel that the development costs for small infill parcels along with the long bureaucratic delays and potential opposition, make infilling a large risk. With the advocacy of growth management policies, this however is changing.

14. Physical Characteristics. Physical site characteristics such as parcel size and shape, location with a flood plain, or the geological building suitability also affect the infill potential of a site. There are numerous physical site conditions that may lessen the infill potential of any particular site from land-locked parcels to environmental considerations. Research has shown that many urban infill sites are small, with few being larger than five acres and the median size being one-fourth acre (even smaller in the central cities, 4,000-6,000 square feet) (59). Most developers feel that as parcel size decreases the development risks increase.

15. Environmental Considerations. Environmental considerations, such as soils, slope, or drainage, have been perceived as detriments to infilling. Recent research has revealed that environmental considerations may be somewhat exaggerated, at least from most major environmental constraints. Specialized construction techniques along with changing market factors are now allowing developers more profitable opportunities for future development (60).

16. Neighborhood Environment. The last major reason as to why infilling has been neglected is that of neighborhood environments. This may be a very important factor. Sometimes the physical and social characteristics of the surrounding neighborhood may indeed be the cause of vacant or under-used sites. Declining real estate values, older areas, concentrations of low and moderate income persons, suburban flight and high crime rates are just a few factors that may create vacant urban sites or potential (yet uncovered) infill sites (61).

Studies are now showing that the focus of development is now shifting back to the urban environment with the advent of urban growth control measures and that many of the best urban infill potentials lie in neighborhoods that have experienced decline (62). These areas are now being rehabilitated and upgraded and infilling provides an excellent opportunity to achieve both.

. Yet, developers usually encounter tremendous opposition toward infilling. Concerns of changing neighborhood character and land uses and fear of displacement through gentrification, along with other neighborhood concerns, may cause a great deal of opposition toward infilling. The majority of developers today are not accustomed to this type of neighborhood opposition and are hesitant to develop infill parcels (63). Local governments should anticipate, plan for and resolve conflicts between developers and neighborhoods concerning infilling. Most problems stem from a lack of understanding and fear of change and can be worked out through public interaction and design controls (64). The key is coordination and communication between developers, the public and local governments.

MARKET FACTORS AFFECTING INFILL POTENTIAL

There are a number of market factors that affect the potential for infill development. Figure 2.2 amplifies some of the most dominant factors and points out those markets with the highest potential (65).

As can be seen from Figure 2.2, there are a number of factors that can affect infill potentials from growth to available services. According to the Real Estate Research Corporation (RERC), there are four conditions that are essential for the successful development of an infill site: 1) proximity to downtown employment, transportation, shopping, cultural and other facilities; 2) successful small-scale redevelopment; 3) innovation solutions to problems that have previously held back development; and 4) minimal problems with neighborhood environment (66).

OPTIMUM INFILL SITE

There are a number of conditions that should exist in order to constitute what might be called the optimum infill site. Figure 2.3 is a summary of those issues dealing with the local context of the infill site as well as the infill site itself, as seen by the Urban Land Institute and RERC (67).

Unfortunately, the optimum infill site is hard to come by. Local governments should work with local developers to identify potential infill sites. (There are more sites that might be thought of.) Some techniques toward the identification of potential infill sites will be discussed later in this paper.

Figure 2.2: Factors Affecting Infill Potential

<u>Factor</u>	<u>Markets with Highest Potential</u>
Growth	Rapidly growing population; high demand for new housing.
Building Conditions	Extensive investment (public and private) in neighborhood preservation and upgrading.
Employment Centers	Strong CBD and employment nodes; long commuting distances.
Resident Income	Infill land located in a variety of neighborhoods serving many income groups.
Land Prices	Shallow land price gradient from urban fringe to inner city or significant density differences to balance steep gradient.
Growth Controls	Limits on outward spread of development operating region wide.
Availability and Cost of Services	Developers at the fringe pay costs of service extensions and assist with other public facility costs.

Source: Real Estate Research Corporation, Infill Development Strategies (Washington, D.C.: Real Estate Research Corporation and The Urban Land Institute, 1982).

Figure 2.3: The Optimum Infill Site

<u>The Context</u>	<u>The Property</u>
- Viable market area	- Realistic land prices
- Compatible surrounding properties	- Sufficient size
- Receptive neighborhood	- Perceived market for intended uses
- Helpful city government	- Adequate utilities
- Little environmental problems	- Street frontage
- Workable building codes	- Good parcel shape
- Good public services	- Appropriate zoning
	- Few environmental problems (slope, soils)
	- Potential development profitability

Source: Eric Smart, Making Infill Projects Work (Washington, D.C.: Real Estate Research Corporation and The Urban Land Institute, 1985).

ADVERSE AFFECTS OF INFILL

While there are a number of trends that today encourage infill development and that are creating the need to identify and overcome obstacles that have previously held back development, there are a number of potential adverse affects that may be created by infilling. Most of the adverse affects of infill, through governmental and private cooperation concerning the development of such sites, can be overcome. Urban infill is usually small scale and through such things as design guidelines and density controls, infill projects can prove to be an asset to an area rather than a detriment.

1. Gentrification. The gentrification of an area through infill may cause the displacement of persons previously residing in the area (68). This is especially true in areas of low and moderate income populations.

Infill development may reduce the future development potentials of a site or the entire area. Developments that are similar to existing developments should only be encouraged when such development patterns reflect the future land use needs of the area (69). Infill development, like any other type of developments, should reflect the long-term as well as intermediate and short-term gains produced.

2. Reduction of Open Lands. Many opponents of infill believe that infilling will result in the reduction of open lands (70). While there are a number of vacant lands within communities today, some open lands should be kept as "breathing room" and infill development should not consume these lands. Through controlled development, both infilling and open space can be accommodated in our communities.

3. Inflated Land Prices. Infill development may also cause land prices to become inflated. To prevent this, more land should be made available for development than that amount that is actually demanded thus, keeping land cost reasonable (71). Unfortunately, this may be difficult to control as infilling gains popularity.

4. Increased Construction Costs. The last potential adverse affect of infill to be examined is that of increased construction costs. Small-scale projects may have higher construction costs due to higher engineering costs, market factors or design costs because these sites are unique in nature (72). As mentioned earlier, infilling costs are becoming compatible with fringe development costs and new construction and design techniques may also help keep construction costs competitive.

CHANGING ATTITUDES TOWARD INFILL

As stated previously, with public and private cooperation, the potential adverse affects of infill development may be overcome. The future direction of infilling is good, as market conditions that favor infill are improving. Yet, there is still strong resentment towards infill. The reality of the "American Dream" of single-family housing, a big yard and room to "play" in the suburbs is still alive and well in our society (73).

At the same time though, communities are now becoming aware of the positive potentials for infill development. Communities should research, define and promote infilling to encourage the maximum and efficient use of our cities in a day and age of ever-increasing growth

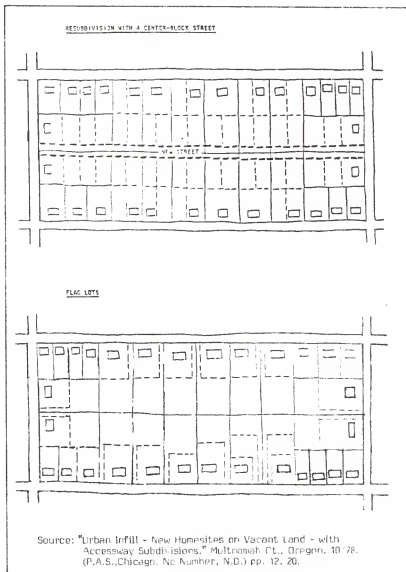
control measures, demographic shifts and public pressures to improve the quality of our living environment (74).

1. Governmental Support. Infill development should continue to get the support of local governments, along with other growth control measures. Infill is not a means of stopping suburban growth, but it can provide an alternative to urban sprawl in some situations (75). In order to protect the public goals, infill development should be incorporated into the development goals of our communities along with growth goals and plans for suburban development.

Many communities today are incorporating infill policies into their community plans. San Diego, California and Multnomah County, Portland, Oregon have all incorporated policies that favor infill development. Portland's incentives have been created for infilling with specific provisions for the development of flag lots, small clusters, attached housing on small lots, zero-lot-line provisions and the subdivision of single-family lots into two lots (76). Figure 2.4 is an example of the re-subdivision of single-family lots and the utilization of flag lots (77).

Many other communities throughout the U.S. are making changes in the zoning regulations to allow for infill development. Walnut Creek, California now allows a second unit on large single family lots. These lots are usually older, large lots that by today's standards would be considered two or more lots. The City of Hartford, Connecticut has developed guidelines for infill development in residential areas. Oklahoma City, Oklahoma has replaced one high density district with three districts of lower densities in hopes of encouraging the

Figure 2.4: Re-subdivision of Single Family Lots and Flag Lots



acceptance of small multi-family uses. The City of Raleigh, North Carolina has revised their zoning ordinance in an attempt to make infilling easier as well as the City of Cincinnati, Ohio (78).

As can be seen, many communities today are becoming aware of the benefits and potentials for infill development and this awareness is being reflected in the creation of policies that favor infill development.

MANHATTAN'S INFILL OPPORTUNITIES

The City of Manhattan, Kansas has a unique opportunity to capitalize infill opportunities through the use of the Planned Unit Development District Ordinance of the Manhattan Zoning Ordinances. Chapter Three of this paper will focus on the growth control policies of the City of Manhattan, the PUD concept and Manhattan's opportunity to promote infill development through the PUD ordinance.

CHAPTER 3

INFILL AND THE CITY OF MANHATTAN

As can be seen in the conclusion of Chapter Two, a growing number of communities are now developing goals and policies that support infill development. A share of these communities have made changes in their planning programs to accommodate infill. For example, the State of California has recommended specific actions that will encourage infilling. One of those recommendations is the utilization of the planned unit development (PUD) ordinance to accommodate infill development, allowing for maximum use and efficient design (79).

The City of Manhattan has the potential to also utilize the PUD concept to accommodate infill strategies. In this chapter the long range objectives concerning planning, growth management policies, the PUD concept and ordinance, and how Manhattan accommodates infill, through these tools, will be discussed.

PLANNING IN MANHATTAN

Planning first started in Manhattan in 1925 when the City Commission created a Planning Board as an advisory agency for the long range development of the City (80). From this beginning planning has continued to be a controlling factor in the development of Manhattan.

1. Long Range Goals. The long range goals of the City state that "... fringe development is one of the greatest problems in the American city today... It places a heavy burden on the city to provide services and it tends to create blight in older residential areas when families migrate to the suburbs... If development is allowed outside the city

limits, the City suffers a tax loss and finally, downtown business tends to suffer as the population shifts outwards and residents find suburban shopping more convenient" (81).

While the City of Manhattan admits that this problem is not as significant here as in the major metropolitan areas, it does believe that suburban fringe flight is a problem faced by the community (82). For all practical purposes, suburban residents although they lie outside the city limits, thus paying no city taxes, are a part of the community and expect to be treated as if they were so.

2. Urban Sprawl. According to a 1977 study, Where Do We Grow From Here?, it was apparent that growth in Manhattan was not being properly managed. The City realizing that Manhattan was growing and changing "... incrementally in a piece-meal fashion, *laissez-faire* manner..." and that "... uncontrolled growth (sprawl) was wasteful of both public and private resources..." set a goal of establishing a growth control policy for the City (83).

The study revealed that over the period 1967-1977, there was an increase in population in Manhattan of approximately 26%. During that same period land was increased by approximately 53%, thus concluding that urban sprawl was occurring. At the same time, of the 5,481 acres of land within the city limits, a total of 1,183 acres was vacant land. Of that 1,183 acres of vacant land, it was determined that the majority of it landed within the flood plain or had physical site problems such as improper zoning or high development costs (84).

The City utilizes the Capital Improvement Program for some infrastructure decisions. It was noted at this time that while the

density of Manhattan was decreasing (population—26% increase, land use—52% increase), the mileage of the sanitary sewer systems increased by nearly 51% and the water lines increased by 53% (85).

The City, noting that these were the costs of urban sprawl, along with other reasons and realized that "... high density development requires better design and sensitivity to the land, the environment and human needs" (86). The City realized that the older portions of the City represented a significant investment of private and public facilities and is what gives the City a sense "... of time, place and heritage — all of which should be cared for" (87).

GROWTH MANAGEMENT

Techniques were to be designated to utilize those goals and from that study evolved the Growth Management Policy and Guidance System of the City of Manhattan in 1979. The purpose of the Growth Management Policies was, and still is today, to provide guidance on development proposals, zoning and subdivision requests, capital improvements, programming and other public and private development decisions (88).

A couple of the goals within the Growth Management Policy express well the intentions of the City. The first is that "... it is the Governing Body's intention to maintain, conserve, rehabilitate, and/or redevelop the housing and neighborhoods... with any appropriate resources..." and the second, that "... based on the ability to provide services, and the impacts on the environment, community values, and the quality of life... growth should be coordinated and planned to

conform to the public interest... to ensure that growth maximizes the benefits for the community as a whole..." (89).

GROWTH GUIDANCE

The Growth Guidance system of the City of Manhattan designates a number of purposes for the system of which the following four could be determined to promote infill development. They are: 1) to conserve land, energy and other resources by encouraging orderly growth and minimizing urban sprawl; 2) to make more efficient use of public resources by locating facilities and providing services within areas planned for future growth; 3) to direct urban development into planned areas where basic services such as sewer and water facilities and fire protection can be efficiently and economically a part of the City; and 4) to minimize negative impacts of scattered urban development on both the City and the County (90). Infill development can be utilized as a means of achieving these goals. Many of the benefits of infilling fall well within these goals and the City of Manhattan can utilize infilling as a tool to help achieve these goals.

PLANNED UNIT DEVELOPMENT CONCEPT

One technique that might be utilized to fulfill the goals of the Growth Management Policy and Guidance System and promotes infilling is the Planned Unit Development (PUD) concept. While this concept has been around for a number of years, following World War II, to meet the increased demands for housing, the PUD concept gained widespread popularity (91). Planned Unit Development ordinances throughout

the U.S. vary greatly in both intent and contents due to the unique characteristics of each community. Modern zoning ordinances "... seek to modify the Euclidian pattern and to regulate land use in a way which will meet current needs and permit adjustment to changing demands" (92). The PUD technique may be applied to an area where it is desirable to apply regulations more flexibly than the rigid standards of Euclidian zoning (93).

The PUD is a "... land development project comprehensively planned as an entity via a unitary site plan, which permits flexibility in building site, mixtures of housing types and land uses, usable open spaces and the preservation of significant natural features" (94). Criteria and design standards are established within the PUD ordinance to ensure a proper development. The PUD review process is usually similar to that of a standard subdivision and site review process, yet more discretion is required in the application of the PUD ordinance requirements (95).

The common PUD ordinance authorizes the creation of a PUD district by the legislative body (96). In most cases such a district is a floating zone that is not initially located on the zoning map. The PUD district is then placed on the zoning map by a zoning amendment (97).

Plans for a PUD are filed with the Planning Board, who after reviewing their fulfillment of set standards, makes a recommendation to the City Commission, who will deny or adopt the plan. These steps are done in order to ensure compliance of the plan with the goals of the community established in the Comprehensive Plan.

MANHATTAN'S PUD ORDINANCE

Manhattan's PUD ordinance, like those of other communities, entails a very cumbersome process in order to ensure proper development. Preliminary and final plans require detailed and expensive studies including preliminary landscaping plans and even preliminary plans prepared by the landowner(s) concerning intent and ownership plans (98), all in all, making the PUD process very expensive, detailed and time consuming.

The PUD district ordinance was created in 1977 (previously called the PDD district—Planned Development District), and has been revised and updated over the years as planning attitudes and techniques change to reflect the goals and policies of the City. Many of the objectives and purposes of the PUD ordinance reflect those of the growth management policies. Figure 3.1 is a listing of Section 9-101, the Purposes and Objectives of the PUD ordinance that are designed to promote progressive development and construction thereon (99).

Section 9-102 states special requirements governing development that are to be required due to the special characteristics of PUD's. Standards and criteria have been established for such things as landscaping, drainage, circulation, open spaces, conformity to land use plans and respect for the character of the land and the surrounding neighborhood (100).

In Manhattan, PUD's are allowed in residential, commercial and industrial districts under all permitted or conditional uses allowed in those respective districts. The minimum parcel size for PUD's is one-half (1/2) acre for residential and commercial development and one

Figure 3.1: Purpose and Objectives--Manhattan PUD Ordinance

9-101

- (A) A maximum choice of living environments by allowing a variety of housing and building types or permitting an increased density per acre and a reduction in lot dimensions, yards, building setbacks, and area requirements.
- (B) A more useful pattern of open space and recreation areas and, if permitted as part of the project, more convenience in the location of accessory commercial uses and services.
- (C) A development pattern which preserves and utilizes natural topography and geological features, scenic vistas, trees and other vegetation, and prevents the disruption of natural drainage patterns.
- (D) A more efficient use of land than is generally achieved through conventional development resulting in substantial savings through shorter utilities and streets.
- (E) A development pattern in harmony with land use density, transportation facilities, and community facilities that are objectives of the comprehensive plan.
- (F) An environment which provides safe, clean, convenient and necessary residential, commercial, and industrial facilities which will afford greater opportunities for better housing, recreation, shops, and industrial plants for all citizens of the community.

Source: City of Manhattan, Kansas, Zoning Ordinances, Article 9, Revised 1985.

(1) acre for industrial developments. Maximum lot coverage allowed is 40% for residential developments, 50% for commercial developments and 60% for industrial developments, principal and accessory structures (101).

1. Minimum Parcel Size. Manhattan's minimum parcel size requirements for a PUD are relatively small as compared to various ordinances from around the U.S. This can be seen in Figure 3.1, displaying various minimum parcel size requirements for residential PUD's (102). In a survey conducted by the American Society of Planning Officials, while most ordinances allowed planned unit developments of five (5) acres or less, they generally require a minimum parcel size of one (1) to two (2) acres (103).

Although Manhattan's minimum parcel size requirements are relatively small as compared to other communities, it offers a unique opportunity for the promotion of small lot infill development as well as large lot infilling.

Many communities today are adopting infill development districts, where more intensive residential or commercial development is allowed on small parcels (104). These ordinances usually specify density maximums and design requirements in order to make sure that the development is compatible with surrounding land uses and are usually designed for residential uses rather than mixed-use developments (105).

Manhattan's small parcel size requirements (especially the 1/2 acre for residential PUD's) thus becomes an ideal tool for the development of infill sites. The following chapter will explore four infill projects that have occurred in Manhattan in recent years through the utilization of the PUD district ordinance.

Figure 3.2: Minimum Parcel Size Requirements for Planned Unit
Developments

Manhattan, KS	.5 acres
Cambridge, MA	2.5 acres
Portland, OR	2.0 acres
Manate Ct., FL	2.0 acres
St. Mary's Ct., MD	5.0 acres
Abilene, TX	4.0 acres
Heindon, VA	4.0 acres
Chelan Ct., CA	10.0 acres

Source: City of Abilene, Texas, "Planned Unit Development Zoning Ordinance," Sect. 32-11.6.1 (Abilene: City of Abilene, n.d.), p. 115; City of Cambridge, Mass., "Planned Unit Development Districts," Article 12.52, (Cambridge: City of Cambridge, 1977), p. 12-7; City of Herndon, Virginia, "Article 14," Section 28-15-3 (Herndon, City of Herndon, n.d.), p. 66; City of Manhattan, Kansas, "Planned Unit Development Districts," Article 9, Manhattan Zoning Ordinance, (Manhattan: City of Manhattan, revised 1985), p. 9-2; City of Portland, Oregon, "Planned Unit Development Zoning Ordinance," Chapter 33.79.0501. (c), (Portland: City of Portland, n.d.), p. 5; County of Chelan, California, "P.D. Planned Development District Zoning Ordinance," chpt. 11.38.020 (4), (n.p.: County of Chelan, 1970), p. 92-8; County of Manate, Florida, "PDC Planned Commercial Development Districts," Sect. 203R, (n.p.: County of Manate, n.d.), p. 2-105; County of St. Mary's, Maryland, "Planned Unit Developments," Chpt. 38.06 6(2), (n.p.: County of St. Mary's, n.d.), p. 3-91.

CHAPTER 4

PUD INFILL PROJECTS IN MANHATTAN

Although Manhattan's minimum parcel size is relatively small as compared to other communities, it offers a unique opportunity for the promotion of infill development. In recent years, the City has approved a number of PUD's. In this chapter four selected PUD developments that constitute infill will be examined. The sites vary from commercial re-use of land to new residential developments. One point that is interesting to note is that all of these infill sites are located in the urban proximity and all the sites are less than two acres in size. These infill projects exemplify how the PUD ordinance can be utilized to promote and carry out infilling in the City of Manhattan.

The City of Manhattan has experienced growth in recent years and the City has continued to expand outwardly, but in an orderly and controlled manner. These PUD's reinforce how new development and re-use can occur within the urban proximity along with suburban development.

Two of the sites, Westwood Village and Hummel Estates, are excellent examples of how the PUD can accommodate the development of otherwise inaccessible sites. One site, the Orchard, exemplifies the development of an abandoned street right-of-way and the fourth site, the First National Bank Center, is an excellent example of commercial development in an otherwise residential use area. The public facilities and infrastructure systems all existed within these infill areas and were adequate for these projects.

Westwood Village PUD

The Westwood Village PUD is located north of Dickens Avenue and east of the Marlatt School. The site contains four condominium type structures containing 14, two and three bedroom units on 1.93 acres of land with a density of approximately 7.25 dwelling units per acre.

The previous land use of the site was vacant, open land. The current surrounding land uses are low density residential to the north, open space and residential land to the east, predominately open space to the south and Marlatt Elementary School to the west. The land use plan for the area designates low density residential development for this area.

The site configuration is a rather narrow (145 ft.) and long (585 ft.) sloping to the south. There are a number of large trees scattered throughout the site and drainage appears to be to the south.

The development of this site with low density condominium type units appears to fit in well with the surrounding land uses. The units are all backed off the eastern and northern boundaries of the site, utilizing the natural topography and preserving and utilizing the existing abundance of large shade and shelter trees contained within the site. The atmosphere created by the private entrance emphasizes the residential nature of the development, while at the same time allowing access to all units through one common drive. The impact upon the surrounding areas appears to be minimal, with residential uses surrounding the site.

Condominium type attached housing is the key to making this infill site feasible for development. Through the use of the PUD ordinance,

Figure 4.2: Site Plan--Westwood Village PUD

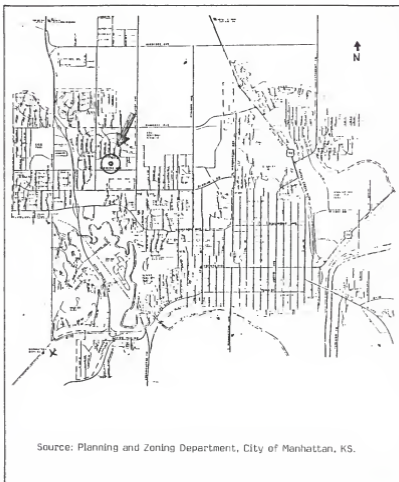


Figure 4.3: Site Plan--Westwood Village PUD



BUILDING A1 & A-2



BUILDING B



BUILDING C



Source: Planning and Zoning Dept.
City of Manhattan, KS.

this uniquely shaped parcel of land has provided a maximum efficiency of land use on what was thought to be a more or less land-locked parcel (with the exception of that portion directly facing Dickens Avenue).

The Orchard PUD

The Orchard PUD is located at 1800 Colorado Avenue constituting both sides of vacated 18th Street on the north side of Colorado Street. The site contains a total of seven townhouse type units (1-3 units, 1-2 units, and 1 unit attached to a previously existing structure) on a site of approximately .82 acres. The density of development is approximately 8.54 dwelling units per acre.

The previous use of the site was one residential structure, vacated 18th Street, and a vacant lot to the east. The surrounding land uses are single-family and two-family residential to the north, two-family residential to the east, single and two-family residential to the south and single-family residential to the west.

The site configuration is almost square in nature with dimensions being approximately 210 ft. wide, 180 ft. deep on the west and 150 ft. deep on the east. The site slopes rather significantly to the southeast and the entire site contains numerous large shade trees.

This development appears also to fit into the character of the local neighborhood. Although the site is rather compact, thus losing the appearance of open space, there are a large number of trees that act as screening to the surrounding residential uses. One point that helps to make this development fit in with the surrounding residential uses is the physical appearance of the structures. The structures themselves blend in well with the architectural styles that surround

Figure 4.3: Locational Map--The Orchard PUD

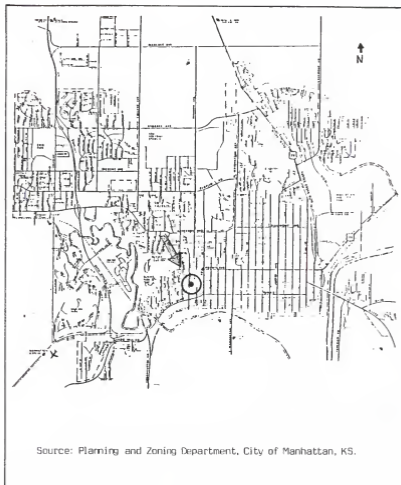
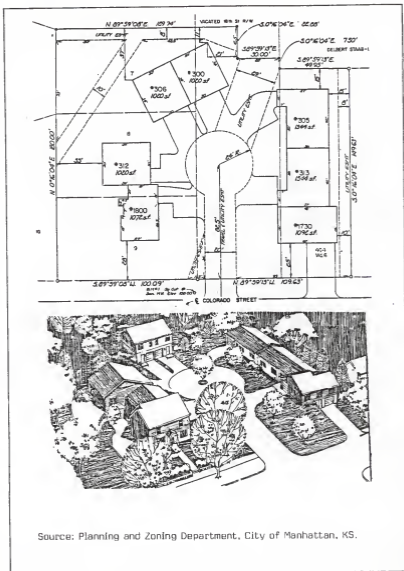


Figure 4.4: Site Plan--The Orchard PUD



them. A unique point about this development is the utilization of the one residential structure that previously existed on the site.

Yet while this development blends in well with the local environment, and residential development for the site is probably the most adequate type of development, the site appears to be crowded. Development at a lower density might have been an improvement to this site, allowing for more open space and less paved surfaces. Residential development to the east of the site backs directly off the boundary of the property line, but screening appears to be adequate between the two developments.

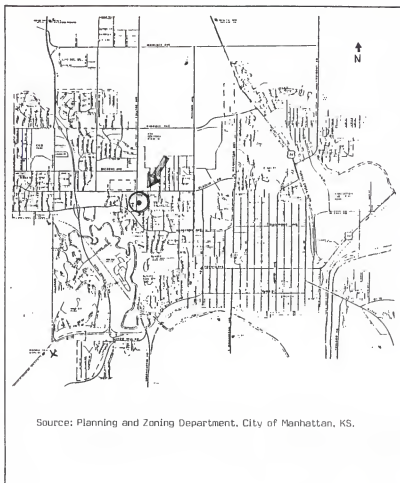
This townhouse type development appears to an efficient use of the land, although density at a lower level might have improved the development allowing for more open space and private yards. Development at higher density allows for more economically feasible development, and this site does conform with the PUD ordinance regulations.

Hummel Estates PUD

The Hummel Estates PDD* is located south of Claflin Avenue and north of College Heights Road on College Avenue. The site contains three single-family residential units (1 previously existing) on approximately one (1) acre. The density of development is three dwelling units per acre.

*The term PDD—Planned Development District—was the predecessor ordinance to the PUD—Planned Unit Development District. This site was initiated in 1978 before the name change to PUD was made.

Figure 4.5: Locational Map--Hummel Estates PUD



The map shows three adjacent lots. Lot 1 (right) has a width of 67' 0" and a depth of 100' 0". Lot 2 (middle) has a width of 67' 0" and a depth of 100' 0". Lot 3 (left) has a width of 67' 0" and a depth of 100' 0". The total width of the three lots is 201' 0". The total depth is 100' 0". The map also shows existing structures on Lots 2 and 3, and a building line on Lot 3.

LEGEND

- Iron Pipe Found
- Monument Found in Place
- Bar Set into Survey
- Section Monument

Scale 1" = 50'

The previous land use of the site was one single-family residential unit and open space. The surrounding land uses are a church and low density residential development to the north, a playground to the east, and low density residential development to the south and west. The land use plan for this area designates low density residential development.

The site is rather narrow, approximately 110 ft. wide and approximately 400 feet long. The site is developed with three single-family residences, all sharing a common, private gravel drive. A travel easement was created on the south portions of lots 3 and 2, in order for accessibility to lots 2 and 1.

It appears that no specific landscaping or screening requirements were made of this development, although there are a large number of elderly shade trees located on the south portion of the site screening the structures somewhat from development to the south.

One unique point of this PUD is that this infill project allowed for the development of a long, narrow strip of land that was not dividable under existing regulations. While this development is classified as a PUD, it appears to have few characteristics of a PUD. The site appears to be more of a simple, residential development gaining two additional sites through the utilization of the PUD, by allowing for the establishment of private access to the lots.

Drainage does not appear to be a problem with this site, and landscaping is similar to that found around any residential unit. This site could have been improved by requiring more intensive landscaping to separate the units and requiring the paving of the common drive.

The site was developed as a PUD and should conform to the criteria established within the ordinance.**

First National Bank Center

The First National Bank Center is located on the northwest corner of Claflin and Denison Avenues. The site contains a drive-up bank, a convenience store, professional offices, a restaurant and several other retail uses. The area of the site is approximately 1.35 acres and the commercial structures comprise approximately one-half of the land (.60 acres). The vast majority of the remaining land is utilized for parking and vehicle access.

The previous land use of the site was very similar to the current uses. The site consisted of a drive-up bank (located in a trailer) and a convenience store. The surrounding land uses are oriented towards the University campus located to the east of the site. To the north is multi-family residential uses and sororities, to the south are KSU dormitories, and to the west are multi-family residential developments and a religious center. The entire nature of this area is very active and greatly influenced by the University, although it is predominately a residential neighborhood.

The land use plan for this area indicates that the use as a neighborhood shopping district is applicable. All public facilities and infrastructure systems were adequate for this development.

**It should be noted that this development was made under the PDD district, of which the regulations were slightly less demanding than the current PUD regulations and that this is currently being modified.

Figure 4.7: Locational Map--First National Bank Center PUD

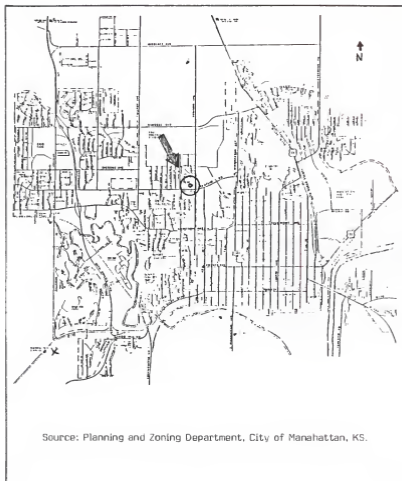
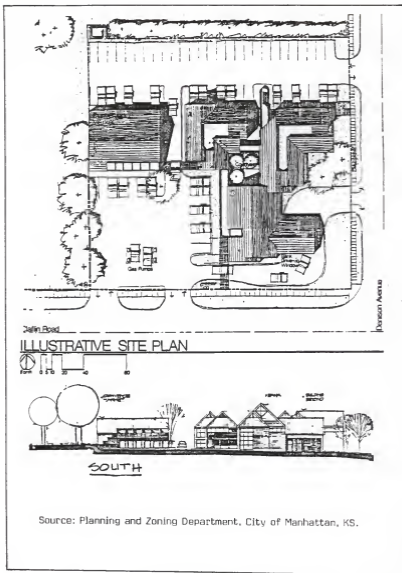


Figure 4.8: Site Plan--First National Bank Center PUD



although some minor alterations were made to the location of the facilities. The site is rectangular in shape having side dimensions of approximately 240 ft. each.

The site was developed as a PUD to allow for more intensive and creative use of the site. While this site is located adjacent to the residential developments, it appears to be screened from the surrounding developments. The majority of the retail parking is located to the back of the structures, acting as a buffering agent along with fencing and shrubbery. The west side of the site contains the convenience store, and it is screened from development to the west again by shrubbery.

Although this development is of a commercial nature, the University atmosphere and high density developments surrounding the site create an atmosphere of high levels of activity. Due to this, the PUD appears to fit into the general character of the area. Traffic within the area is great and this small development does generate additional traffic, but the design of the development appears to accommodate this additional traffic.

While this type of development previously existed on the site and would have been allowed to continue to exist, the utilization of the PUD ordinance allowed for intensive commercial development with controlled design. The new development contains more intensive development and better design qualities than the previous development and is an excellent example of re-use infilling.

CHAPTER 5

IMPROVING INFILL POTENTIAL

There are a number of incentives that may be utilized to improve infill development feasibility and make it competitive with suburban fringe development. Local governments, in many cases, can find some of these incentives within their current programs, such as those that have been utilized in redevelopment and rehabilitation programs. Other incentives that encourage infilling may have to be created, utilizing current systems in cooperation with new techniques.

In order to stimulate an interest in infill development, there are a number of tools and techniques that communities can utilize ranging from stimulating interest to correcting infrastructure problems. This chapter will examine a number of tools and techniques that might be utilized for the encouragement of infill.

ENCOURAGING INFILLING

There are seven (7) common actions that local governments can take to encourage infilling. These seven actions are: 1) stimulating developers interest; 2) removal of governmental obstacles; 3) creating infill support; 4) addressing market weaknesses; 5) addressing site specific problems; 6) increasing land availability; and 7) correcting infrastructure problems. There are a number of incentives that may be created under each of these basic actions. In an attempt to explain these actions, it is necessary to look at a number of these incentives for encouraging infilling that are available to local governments today.

1. Stimulating Developers Interest

The first action that might be taken is that of stimulating developers interest in infill development (106). There are three incentives that might be utilized in order to achieve this they are training programs, design competitions, and parcel files.

A. Training Programs. The first incentive, training programs, may be accomplished in a number of ways. Communities may utilize local communication media to advertise infill sites and techniques. Public meetings, held with local developers and the general public, are another means of stimulating interest in infill (107).

B. Design Competitions. Another incentive that might be used is that of offering design competitions for specific infill sites. Offering low prices and providing publicity to developers through such a competition may achieve recognition for both the developer and infilling as a viable development option (108).

C. Parcel Files. The third incentive that might help to increase interest in infill is the creation of parcel files. The identification and evaluation of potential infill sites is a way of encouraging awareness of infill sites (109). There are a number of ways to create parcel files. They may be adapted from current records, public agencies or new land use studies might be undertaken. Existing land use information may be utilized as a basis to build parcel files upon. Other techniques include aerial photography, tax assessor's files, or field surveys (110). A typical parcel file should contain such information as: street addresses, lot size and dimensions, zoning designation, owner's name and address, planned uses, assessed

valuation, utility service availability, a physical description, adjacent land uses, and a traffic analysis (111). This information, along with an evaluation of the site, should then be made available for public use. If the public is made aware of potential infill sites and their characteristics, development of such sites may be encouraged.

2. Removing Governmental Obstacles

Another action that might be taken is that of removing obstacles created by local governments that deter from infilling. Again, there are a number of techniques that might be utilized to achieve this. Three ways to remove governmental obstacles are to re-examine codes and requirements (high standards) to reduce the delays involved in project review and to examine and alter the zoning balance (112). A major force that drives developers to fringe areas is strict urban development regulations and lengthy administration procedures. By simplifying permitting systems, lowering fees or streamlining administrative procedures, infill development may become a more feasible development alternative (113).

A. Modify Codes and Regulations. Development standards today are much more stringent than in years past. In the older, urban areas of many communities, while infill sites are available, due to current standards those sites may not be developable. By modifying building codes or allowing for the utilization of techniques such as zero-lot-line or cluster development, infill may become a viable alternative for developers (114).

B. Modify Administrative Procedures. Administrative procedures for development have, in most cases, been created for large scale

projects. In order to stimulate infilling, procedures should be scaled down and streamlined. Figure 5.1 outlines a number of techniques for streamlining administrative procedures for land use regulations (116).

Some communities have taken even more specific actions towards the encouragement of infill development such as the waiver of requirements for environment impact reviews for residential developments in built-up areas, the waiver of development fees for small infill projects, simultaneous reviews, and the utilization of the PUD to enhance development opportunities. King County, Washington and Montgomery County, Maryland have created specific infill zones to allow for the use of clustering techniques (117).

C. Modify Zoning. Current zoning may also play a critical role in the encouragement of or deterrence from infill development. In many communities, the current zoning does not match land use demands (118). There may be too much land zoned for certain uses or too little zoned for other uses. Cities should look at current zoning and determine where it is inaccurate for current land use demands and make the appropriate alterations. There are three forms of zoning incentives that might be utilized (119). Upzoning, allowing for higher densities making development more financially attractive, is the first technique. The second technique is down zoning, increasing the range of development types allowed to improve the marketability of sites. Allowing for greater flexibility in requirements for building location and sites through the utilization of such concepts as the PUD, is the third technique. (The utilization of the PUD or similar ordinances

Figure 5.1: Techniques for Streamlining Land Use Regulations

Preapplication Stage

- written materials (design manuals, developers handbooks)
- informal preapplication meetings
- centralized information and permit counters

Staff Review Stage

- Interdepartmental review committees
- Fast tracking projects with minor impacts
- Simultaneous review of multiple permits
- Master environmental impact reports
- Mandatory review time frames
- Permit expeditors or ombudsmen
- Department reorganization
- Improved information systems

Lay Review Stage

- Training for review board members
- Reducing public hearing backlogs
- Improving hearing procedures
- Informal meetings with neighborhood organizations
- Consolidating or eliminating multiple hearings
- Redefining planning commission roles
- Using a hearing examiner
- Creating dual planning commissions
- Mediating of disputes

Sources: U.S. Dept. of HUD. "Streamlining Land Use Regulations. . ." (Washington, D.C.: U.S. Dept. of HUD, 1980.)

allows for variances from standard development regulation as discussed previously.)

In Portland, Oregon, the City has developed a number of techniques to encourage infilling such as the utilization of "junior acre lots" in older subdivisions. This practice basically entails the resubdivision of older, large or unaccessible lots to allow for development. Guidelines have been established for the resubdivision of flag lots for access ways that share private entrances, the development of abandoned alleys and the resubdivision of superblocs (120). These guidelines have been developed to encourage and allow for infilling.

The City of Albuquerque, New Mexico, in a recent planning report suggested several direct procedures for assisting infill development. They are: 1) the establishment of an urban infill zone in the central city, wherein infill areas would be defined; and 2) the assignment of a staff person to assist with infill procedures and administrative procedures, public relations, market analysis and development feasibility (121).

These are just a couple of examples of how communities can assist developers in infilling by modifying current zoning regulations and/or streamlining regulations and administrative procedures. By making development procedures less of an obstacle, infill may be easier to encourage and accomplish.

3. Neighborhood Support

Community understanding and neighborhood support are tools for encouraging infill development. Neighborhood planning and public

project review are two techniques that might be utilized in order to achieve support for infilling.

A. Neighborhood Planning. Neighborhood planning involves the detailed planning for specific areas that are interrelated. Within the plans should be strategies for the development of infill sites (122). These plans should be discussed with the public through various meetings. If local neighborhoods can be brought to an understanding and awareness of potential infilling and its benefits, it should receive less resentment from the public.

B. Public Involvement. Closely related to neighborhood planning, communities should encourage the public review of development plans for infill sites. If developers strive to reach neighborhood goals and objectives by working with local neighborhoods, infill can become a means of fulfilling such goals. Neighborhoods may feel less threatened by infilling if they understand the development, thus having less resistance toward infill projects (123).

4. Addressing Market Weakness

Addressing market weaknesses and uncertainties or poor area images is another tool that might be utilized to encourage infilling. Techniques such as demonstration projects, loan guarantees, the use of financing bonds, area rehabilitation, and the creation of interim uses for sites are all ways that might be utilized to address market issues.

A. Development Corporations. Communities may utilize the assistance of local development corporations such as neighborhood housing services to create demonstration infill projects (124). These types of services may be able to communicate more readily with

neighborhood groups and through the creating of demonstration projects, improve neighborhood attitudes toward infill.

B. Financial Aids. Another technique to encourage infilling is the utilization of loan guarantees or financial bonds such as offering construction or permanent financing below market interest rates, the utilization of tax exempt bonds, revenue bonds, or infill specialized funds such as CDBG or UDAG funds (125). The utilization of such bonds or loans may encourage infilling by making it more feasible.

C. Maintenance and Rehabilitation. Communities may also increase their attention towards maintenance and rehabilitation of urban areas. If property values and infrastructure needs are maintained, there is a greater incentive for infilling than in areas where property values are low and the infrastructure is in poor condition (126).

D. Interim Uses. Infilling may not be a viable development alternative for some sites today, but might possibly be in the future. Along with the maintenance and rehabilitation of areas, interim or non-development uses may be devised to improve the physical appearance and vitality of the area. Vacant lots, abandoned lots, etc. should be attended to and maintained. This would improve the physical quality and appearance of the area and might stimulate infill potential in the future (127).

5. Correcting Site Specific Problems

Improving the overall quality of an area leads to another tool for the encouragement of infill development, the addressing of site specific problems. Some techniques that might be utilized to achieve this are land writedowns, tax abatement, land leasing, density bonuses

or variances and fee waivers. Site specific problems are such as physical or environmental conditions that might cause infill land to be more expensive to develop than other lands. By addressing these problems, communities can lower the effective cost of the land, thus making infill more feasible.

A. Land Writedowns. A technique that became popular in the 1950's along with the Federal Urban Renewal program is that of land writedowns (128). This technique involves a city acquiring land and then reselling it at a lower cost. Municipal funds might be used to make up the difference in land costs as well as CDBG, UDAG, or EDA funds, depending upon the location and nature of the proposed project (129).

B. Tax Abatement. To reduce the high costs of infilling, property tax abatements may be utilized for certain sites to stimulate development. Unpaid previous property taxes often deter from infilling. Tax abatement may make infilling more feasible by making property acquisition more feasible (130).

C. Land Leasing. Another technique that might be utilized is that of land leasing. Long-term ground leases are often attractive because they reduce the developers equity requirements, increase leverage in a project and rent payments are tax deductible (131). Urban land prices may often be very high in relation to fringe land prices. Leasing offers developers a means to develop lands without meeting extremely high land prices.

D. Density Bonuses. Density bonuses on variances which allow for more intensive development of sites is another technique to address

site specific problems. Allowing for increased densities or variances for setbacks or other requirements may create a viable infill opportunity (132).

E. Fee Waivers. In order to generate good will among developers and entice them to look at infilling that they might not of previously considered, fee waivers is another technique that might be utilized (133). Fee waivers could constitute such things as utility hookups, filing fees, or building permits.

6. Increasing Available Lands

A major obstacle to infill may be fragmented ownership of land and the reluctance on the part of owners to sell such lands. Communities may utilize such techniques as eminent domain, land swapping, tax disincentives and land banking to increase the amounts of land available for infill development.

A. Eminent Domain. Eminent domain involves the public taking of private lands for the public welfare. This technique is complicated and expensive and may only be a viable alternative in a few circumstances involving the public welfare (134).

B. Land Swapping. Land swapping, or the trading of public tracks of land for private tracks, on the other hand might be a more feasible technique for communities to utilize. By swapping lands it is possible for communities to acquire sites large enough to make infilling feasible. Or, it may also be possible to obtain land in areas where infill is desired but not currently available (135).

C. Taxing. Taxing vacant land at a higher rate than it currently is, is another technique to encourage infilling. Unfortunately, this

is not usually allowed in the U.S., but it has been suggested that it would make vacant land more marketable and competitive for development (136).

Land Banking. Land banking, the storing up of land by a community for future use, is another technique that might be utilized to address site problems. Unfortunately, land banking is very expensive and most communities cannot economically afford to acquire large amounts of land for future uses (137).

7. Correcting Infrastructure Problems

The last tool that communities might utilize for encouraging infilling is that of correcting existing infrastructure problems that might deter from infill. While these repairs are costly, the correction of such problems as minor extensions of utility lines, replacement and repair activities, road and access improvements and public service improvements can benefit the entire community and increase the potential for infill (138). There are a number of financing techniques that might be utilized to achieve this, such as tax increment financing, special improvement districts, and the targeting of capital improvement monies.

A. Tax Increment Financing. Tax increment financing (TIF), the utilization of tax increases above a set base, is a technique that might be utilized to encourage infilling. TIF funds may be utilized for public facilities improvements such as infrastructure systems (i.e., water, sewer or sanitary sewer lines). Unfortunately, TIF is not applicable in all states and may be strictly limited to commercial or mixed-use projects where applicable (139).

B. Special Improvement Districts. Special improvement districts, created to issue tax exempt bonds, may also be utilized to for road, utility or drainage improvements. This in itself may improve the potential for infilling while at the same time upgrading the quality of the involved area (140).

C. Capital Improvements Programs. The last technique to be discussed is that of targeting capital improvements monies towards the maintenance, upgrading and building of public services such as sewer and water lines and public buildings. By targeting capital improvement funds into an area, infrastructure problems may be corrected and infilling interest in the area may be increased (141).

The tools and techniques discussed here exemplify a number of ways that communities may encourage infilling. These tools and techniques might be used in conjunction with one another or separately, but in any case, communities should look and explore these and other ways that they might be able to utilize to encourage infill development.

CHAPTER 6

CONCLUDING REMARKS

In summary, infill development can produce both benefits and adverse affects, as can be seen in this paper. While there are a number of adverse affects such as gentrification, most can be avoided through careful and wise planning and design efforts. Infill development can be a feasible building alternative to suburban development, as can be seen in the four infill developments discussed in this paper. Infilling cannot solve the problem of increasing urban sprawl, but it can be utilized as a component of a growth management package. It can be a means of protecting and enhancing and revitalizing older, deteriorating neighborhoods, preserving agricultural or environmentally sensitive lands, and as a useful technique to reduce urban sprawl by developing infill sites.

Manhattan's Infill Potentials

The City of Manhattan holds a unique opportunity for encouraging infill development through the utilization of the PUD ordinance. The PUD ordinance is unique in nature due to the small minimum parcel size requirements outlined in the ordinance which can accommodate for small infill projects. Unfortunately, the PUD process is a long cumbersome and expensive process. The City should look for a means of streamlining the PUD process for infill projects, as suggested earlier.

In order to promote infill in Manhattan, the City might choose to take a more active role in infill development. The City could create

parcel files and thus target potential infill sites. After those sites are identified, the City might choose to then act as a mediator, technical assistant and negotiator between landowners and prospective developers. Through public meetings with the involved persons, the City might help landowners and developers reach a feasible infill alternative for the underutilized site. If all involved parties are brought to an understanding of infilling, its benefits both private (i.e. the landowners) and public (i.e. the community as a whole), then development may prove to be the logical use for the site. Staff involvement, to this point, would be of no significant cost to the City with the exception of the man hours of the staff person(s) involved.

If the City wishes to become more involved in the implementation of infill development, consideration should be taken to the development of an infill district and an ordinance pertaining directly to infill development. By designing infill goals, methods and procedures, infilling could become a more dominant component of the growth management of Manhattan.

Other means to aid in the implementation of infilling, that the City might utilize, are financial incentives, such as loan packaging or offering financial assistance in cooperation with local financial institutions. The City might also choose to simplify the permitting system and/or waiver of building fees for small infill projects.

These suggestions should entail more detailed planning studies and additional manpower. However, the City currently participates in a number of activities that could be utilized for the promotion of infill development.

The City currently participates in neighborhood planning, which provides for an excellent opportunity for the promotion of infill development. through neighborhood planning and public meetings with developers, infill can become a positive component of neighborhood goals to improve the quality and character of the neighborhood.

The City also participates in Capital Improvements Programming in an effort to control growth and continually upgrade the quality of life within the city. Capital improvements along with the utilization of special financing techniques such as special improvement districts and tax increment financing may be used to promote infilling in Manhattan. The new Manhattan Town Center is a perfect example of how the City has utilized the land leasing concept (as well as TIF and SID) to promote the redevelopment of a deteriorating central business district.

Currently, the PUD appears to be the most viable tool towards infill development in Manhattan. The small minimum parcel size requirements of the PUD ordinance is quite adaptable for small infill development projects. Yet many of the other techniques discussed in this paper could be utilized by the City depending upon the nature and location of the project. The use of these or other techniques lies in the discretion of the City and the willingness of the City and the community to promote and adaptively utilize infill development potentials and opportunities.

END NOTES

- (1) Eric Smart, Making Infill Projects Work (Washington, D.C.: Real Estate Research Corporation and The Urban Land Institute, 1985), p. vi.
- (2) Charles Abrams, The Language of Cities (New York: Viking Press, 1977), p. 40.
- (3) Deborah L. Brett, Margery al Chalab, and Stephen B. Friedman, "Urban Infill: Opportunities and Constraints—A Working Paper." (Washington, D.C.: Office of Policy Development and Research, U.S. Department of Housing and Urban Development, 1979), p. 2.
- (4) Deborah L. Brett, "Assessing the Feasibility of Infill Development," Urban Land 41, No. 4 (1982): 5.
- (5) Ibid., p. 6.
- (6) Smart, op. cit., p. 1.
- (7) Real Estate Research Corporation, Infill Development Strategies (Washington, D.C.: Real Estate Research Corporation and The Urban Land Institute, 1982), p. 1.
- (8) Richard E. Starr, "Infill Development—Opportunity or Mirage," Urban Land 39, No. 3 (1980): 3-4.
- (9) Real Estate Research Corporation, op. cit., p. 3.
- (10) Ibid., p. 1.
- (11) Ibid., p. 3.
- (12) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 2.
- (13) Deborah L. Brett, op. cit., p. 3.
- (14) Richard E. Starr, op. cit., p. 3.
- (15) Eric Smart, op. cit., p. 5.
- (16) Ibid.
- (17) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 27.
- (18) Deborah L. Brett, op. cit., p. 3.

- (19) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 27.
- (20) Ibid.
- (21) Real Estate Research Corporation, op. cit., p. 2.
- (22) Ibid.
- (23) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 8.
- (24) Ibid., p. 28.
- (25) Ibid., p. 29.
- (26) Richard E. Starr, op. cit., p. 4.
- (27) Eric Smart, op. cit., p. 24.
- (28) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 31.
- (29) Ibid.
- (30) Ibid., p. 32.
- (31) Ibid., p. 32-33.
- (32) Ibid., p. 33-34.
- (33) Ibid., p. 34.
- (34) Eric Smart, op. cit., p. 13.
- (35) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 4.
- (36) Deborah L. Brett, op. cit., p. 4.
- (37) Real Estate Research Corporation, op. cit., p. 7.
- (38) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 9-10.
- (39) Ibid., p. 11.
- (40) Ibid., p. 12.
- (41) Ibid., p. 12-13.
- (42) Ibid., p. 13.

- (43) Eric Smart, *op. cit.*, p. 3.
- (44) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, *op. cit.*, p. 14-15.
- (45) *Ibid.*
- (46) *Ibid.*, p. 15.
- (47) *Ibid.*, p. 16.
- (48) *Ibid.*
- (49) *Ibid.*
- (50) *Ibid.*, p. 17.
- (51) *Ibid.*, p. 19.
- (52) Real Estate Research Corporation, *op. cit.*, p. 10.
- (53) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, *op. cit.*, p. 19.
- (54) *Ibid.*, p. 20.
- (55) Real Estate Research Corporation, *op. cit.*, p. 7.
- (56) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, *op. cit.*, p. 21.
- (57) *Ibid.*, p. 23.
- (58) *Ibid.*
- (59) Deborah L. Brett, *op. cit.*, p. 4.
- (60) *Ibid.*
- (61) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, *op. cit.*, p. 25.
- (62) Deborah L. Brett, *op. cit.*, p. 5.
- (63) Real Estate Research Corporation, *op. cit.*, p. 4.
- (64) *Ibid.*
- (65) *Ibid.*, p. 6.
- (66) Eric Smart, *op. cit.*, p. 7.

- (67) Ibid.
- (68) Deborah L. Brett, Margery al Chalab and Stephen B. Friedman, op. cit., p. 35.
- (69) Ibid., p. 35-36.
- (70) Ibid.
- (71) Ibid., p. 37.
- (72) Ibid., p. 38.
- (73) Richard E. Starr, op. cit., p. 4.
- (74) Ibid.
- (75) John Rahenkamp and Scott Radway, "Infill Development and Cost-Induced Development," Urban Land 42, No. 4 (1983): 36.
- (76) Douglas R. Porter, "Info on Infill," Regulatory Review, Urban Land 51, No. 11 (1984): 32.
- (77) "Urban Infill -- New Homesites on Vacant Land -- with Accessway Subdivisions." Multnomah County, Oregon, 10/78. Planning Advisory Service, No Number, Chicago, N.D.), pp. 12, 20.
- (78) Ibid., p. 33.
- (79) State of California, An Urban Strategy for California (Sacramento: Office of Planning and Research, 1978), n.p.
- (80) City of Manhattan, "The Planning Process--Long Range Objectives of the City of Manhattan," (Manhattan: City of Manhattan, 1953), p. 1.
- (81) Ibid., p. 4.
- (82) Ibid., p. 5.
- (83) City Planning Department, "Where Do We Grow From Here? An Alternate Growth Study" (Manhattan: City of Manhattan, 1977), n.p.
- (84) Ibid.
- (85) Ibid.
- (86) Ibid.
- (87) Ibid.

- (88) City of Manhattan, "Growth Management Policy, 1979-172." (Manhattan: City of Manhattan, 1979), n.p.
- (89) Ibid.
- (90) City of Manhattan, "Growth Guidance System Policy, 1979-266," (Manhattan: City of Manhattan, 1979), n.p.
- (91) Frank S. So, David R. Mosena, and Frank S. Bangs, Jr., "Planned Units Development Ordinances," Planning Advisory Services, No. 291, (Chicago: Planning Advisory Service, 1973), p. 1.
- (92) Robert M. Anderson, American Zoning Law 2nd rev. ed., (n.p.: Lawyers Cooperative, 1976), p. 364.
- (93) Ibid.
- (94) Frank S. So, David R. Mosena, and Frank S. Bangs, Jr., op. cit., p. 2.
- (95) Ibid.
- (96) Robert M. Anderson, op. cit., p. 366.
- (97) Ibid.
- (98) City of Manhattan, "Planned Unit Development Districts," Article 9, City of Manhattan Zoning Ordinances, (Manhattan: City of Manhattan, revised 1985), p. 9-6-9-14.
- (99) Ibid., p. 9-1.
- (100) Ibid., p. 9-1-9-2.
- (101) Ibid., p. 9-4.
- (102) City of Abilene, Texas, "Planned Unit Development Zoning Ordinance," Sect. 32-11.61 (Abilene: City of Abilene, n.d.), p. 115; City of Cambridge, MA, "Planned Unit Development Districts," Article 12.52, (Cambridge: City of Cambridge, 1977), p. 12-7; City of Herndon, Virginia, "Article 14," Section 28-15-3, (Herndon, City of Herndon, n.d.), p. 66; City of Manhattan, Kansas, "Planned Unit Development Districts," Article 9, Manhattan Zoning Ordinance, (Manhattan: City of Manhattan, revised 1985), p. 9-2; City of Portland, Oregon, "Planned Unit Development Zoning Ordinance," Chapter 33.79.0501.(c), (Portland: City of Portland, n.d.), p. 5; County of Chelan, California, "P.D. Planned Development District Zoning Ordinance," Chapt. 11.38.020 (4), (n.p.: County of Chelan, 1970), p. 92-8; County of Manate, Florida, "PDC Planned Commercial Development Districts," Sect. 203R, (n.p.: County of Manate, n.d.), p. 2-105; County of St. Mary's Maryland, "Planned

- Unit Developments," Chapt. 38.06 6 (2), (n.p.: County of St. Mary's, n.d.), p. 3-91.
- (103) Frank S. So, David R. Mosena, and Frank S. Bangs, Jr., op. cit., p. 20.
 - (104) Ronald L. Baers, "Zoning Code Revision to Permit Mixed Use Development," Zoning and Planning Law Report, 7, No. 11 (1984): 84.
 - (105) Ibid.
 - (106) Real Estate Research Corporation, op. cit., p. 43.
 - (107) Ibid., p. 44.
 - (108) Ibid., p. 43.
 - (109) Ibid., p. 34.
 - (110) Ibid., p. 18-20.
 - (111) Ibid., p. 34.
 - (112) Ibid., p. 50.
 - (113) Ibid.
 - (114) Ibid.
 - (115) Eric Smart, op. cit., p. 27.
 - (116) U.S. Department of Housing and Urban Development, "Streamlining Land Use Regulations: A Guidebook for Local Governments," (Washington, O.C.: U.S. Dept. of HUD, Office of Development and Research, 1980), n.p.
 - (117) State of California, op. cit., n.p.
 - (118) Real Estate Research Corporation, op. cit., p. 50.
 - (119) Eric Smart, op. cit., p. 31.
 - (120) United States Department of Housing and Urban Development, "Urban Infill: The Literature," (Washington, O.C.: U.S. Department of HUD, Office of Policy Development and Research, 1980), p. 10.
 - (121) Eric Smart, op. cit., p. 34.
 - (122) Real Estate Research Corporation, op. cit., p. 62.

- (123) Eric Smart, *op. cit.*, p. 30.
- (124) Real Estate Research Corporation, *op. cit.*, p. 67.
- (125) *Ibid.*, p. 66.
- (126) *Ibid.*, p. 67.
- (127) *Ibid.*
- (128) *Ibid.*, p. 79.
- (129) *Ibid.*
- (130) *Ibid.*
- (131) *Ibid.*, p. 80.
- (132) *Ibid.*
- (133) *Ibid.*
- (134) *Ibid.*, p. 91.
- (135) *Ibid.*, p. 91.
- (136) *Ibid.*
- (137) *Ibid.*, p. 92.
- (138) *Ibid.*, p. 80.
- (139) *Ibid.*, p. 81.
- (140) *Ibid.*
- (141) Deborah L. Brett, *op. cit.*, p. 6

BIBLIOGRAPHY

- Abilene, Texas, City of, "Planned Unit Development Zoning Ordinance," Sect. 32, Abilene City Zoning Ordinance, City of Abilene, (n.d.), 111-118.
- Abrams, Charles. The Language of Cities. New York: Viking Press, 1977.
- Atshuler, Alan. "Review of the Cost of Sprawl." Journal of the American Institute of Planners, 43, No. 2 (1979), 207-209.
- Bacon, Edmund. "Total National Commitment Needed to Restor Abandoned Property." Urban Land, 35, No. 1 (1976), 3-4.
- Baers, Ronald L. "Zoning Code Revision to Permit Mixed Use Development." Zoning and Planning Law Report, 7, No. 11 (1984), 84.
- Braden, Maria. "The Ins and Outs of Infill." Landscape Architecture, 72, No. 3 (1982), 84-87.
- Brett, Deborah L. "Assessing the Feasibility of Infill Development." Urban Land, 41, No. 4 (1982), 3-9.
- Brett, Deborah L., Margery al Chalab and Stephen B. Friedman (Real Estate Research Corporation). "Urban Infill: Opportunities and Constraints — A Working Paper." Office of Policy Development and Research, U.S. Department of Housing and Urban Development. Washington, D.C.: U.S. Department of Housing and Urban Development, 1979.
- California, State of, An Urban Strategy for California. Sacramento: Office of Planning and Research, 1978.
- Cambridge, MA: City of, "Planned Unit Development Districts Zoning Ordinance," Article 12, Cambridge City Zoning Ordinance, (1977), 12-2-12-71.
- City Planning Class, (V.P. Deines). Neighborhood Plan — Manhattan, Kansas, College of Architecture and Design, Kansas State University, 1964.
- Chelan, California, County of, "PD Planned Development Districts," Chpt. 11.38, Cheland County Zoning Ordinance (n.d.), 92-7-92-12.
- Cortini, Edgardo. "Transportation and the Recycling of Land." Urban Land, 85, No. 4 (1976), 6-11.
- Cooley, Marianne Lagerquist. "Urban Infill." Builder, 5 No. 12 (1982), 38-43.

- Galarneau, Bernard and Robert Cohen. "Montreal's Housing Hat Tricks: Infill, Rehab and Co-ops." Planning, 51, No. 3 (1985), 18-21.
- Gerardi, Natalie and June R. Vollman. "Open Your Eyes to Sleeper Sites." Housing, 55, No. 5 (1979), 64-77.
- Heideman, M. Lawrence Jr. "Public Implementation and Incentive Devices for Innovation and Experiment in Planned Unit Development." Land Economics, 34, No. 5 (1969), 262-67.
- Herndon, Virginia, City of. "Planned Development Districts." Article 14, Herndon City Zoning Ordinance, (n.d.), 58-71.
- Hoyt, Homer. "Investment in Vacant Land: A Good Hedge Against Inflation?" Urban Land, 34, No. 5 (1975), 10-11.
- Humphries, Barry K. "Renaissance: Rebirth of a Neighborhood." Urban Land, 41, No. 1 (1982), 9-17.
- "If the New Fits, Spare It — Overcoming Hurdles to Infill Development." Urban Land, 51, No. 4 (1984), 36-39.
- Johnston, Robert A., Seymour I. Schwartz, and Steve Tracy. "Growth Phasing and Resistance to Infill Development in Sacramento County." Journal of the American Society of Planners, 50, No. 3 (1984), 434-446.
- Ledewitz, Stefani. "New Houses in Old Neighborhoods." Urban Design International, 4, No. 4 (1984), 36-39.
- Manate, Florida, County of. "PDC Planned Commercial Development Districts." Sect. 203R, County of Manate Zoning Ordinance (n.d.), 2-100 — 2-108.
- Manhattan, Kansas, City of. "Planned Unit Developments Districts." Article 9, City of Manhattan Zoning Ordinance, (revised 1985), 9-1 — 9-22.
- Manhattan, Kansas, City of. "Growth Guidance System" Policy No. 1979-266, City of Manhattan, (1979).
- Manhattan, Kansas, City of. "Growth Policy," Policy No. 1979-172, City of Manhattan, (1979).
- Manhattan, Kansas, City of. "Where Do We Grow From Here? An Alternate Growth Study." City of Manhattan, 1977.
- Manhattan, Kansas, City of. "The Planning Process — Long Range Objectives of the City of Manhattan," City of Manhattan, 1953.
- "New Zoning for Small PUD's." Zoning News, American Planning Association, Chicago. Jan. 1984, 3.

- Northeastern Illinois Planning Commission. NICP Study of Infill Opportunities Mobile Workshop, Friday, October 27, 1978. NICP Work Element #04D5. Chicago: N.P., 1978.
- Porter, Douglas R. "Info on Infill, Regulatory Review." Urban Land, 51, No. 11 (1984), 32-33.
- "Portland, Oregon Studies and Ordinances on Planned Unit Developments." Planning Advisory Service, No number, Chicago, 1984.
- Rahenkamp, John and Scott Radway. "Infill Development and Cost-Inducing Development." Urban Land, 42, No. 4 (1983), 36-37.
- Real Estate Research Corporation. Infill Development Strategies. Washington, D.C.: Real Estate Research Corporation and the Urban Land Institute, 1982.
- Smart, Eric. Making Infill Projects Work. Washington, D.C.: Real Estate Research Corporation and the Urban Land Institute, 1985.
- Smith, Wallace F. "The Sprawling Cost of Urban Containment." California Management Review, 18, No. 3 (1976), 40-45.
- So, Frank S., David R. Mosena and Frank S. Bangs Jr. "Planned Unit Developments Ordinances." PAS, No. 291, Chicago, 1973.
- Starr, Richard E. "Infill Development — Opportunity or Mirage." Urban Land, 39, No. 3 (1980) 3-5.
- St. Mary's, Maryland, County of. "Planned Unit Developments." Chpt. 38.06, St. Mary's County Zoning Ordinances (1980), 3-85 — 3-101.
- United States Department of Housing and Urban Development. "Streamlining Land Use Regulations: A Guide for Local Governments." U.S. Department of HUD, Washington, D.C., 1980.
- United States Department of Housing and Urban Development. "Urban Infill — The Literature." U.S. Department of HUD, Office of Policy Development and Research, Washington, D.C., 1980.
- "Urban Infill — New Homesites on Vacant Land — with Accessway Subdivisions." Multnomah County, Oregon 10/78. Planning Advisory Service, No number. Chicago, N.D.
- Voelker, Bill. "The Alley as a Neglected Urban Resource." Urban Land, 41, No. 2 (1982), 3-4.
- Vollman, June R. "Infill — Making the Most of Tiny Urban Sites." Housing, 58, No. 1 (1980), 50-59.

INFILL BY PLANNED UNIT DEVELOPMENT —
A GROWTH MANAGEMENT TECHNIQUE FOR MANHATTAN, KANSAS?

by

Barbara Haynes-Blaylock
B.S., Emporia State University, 1981

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of
the requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

College of Architecture and Design
Department of Regional and Community Planning

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1987

ABSTRACT

Infill development, the process of developing vacant land in urban areas where the infrastructure system is already in place, is not a new land use technique, but the interest in infilling is new. Urban sprawl, in recent years, has spurred the spread of growth management techniques throughout the United States. Growth management in return has awakened both communities and developers to infill development opportunities. Due to the increasing limited ability of developers to provide services at urban fringes, caused by higher governmental standards, regulatory delays and service fees, escalating land prices, pressures to preserve prime agricultural lands and environmentally sensitive lands, urban sprawl is today losing its attractiveness. Infill goals are becoming a basic tenant in many growth management policies. It is becoming apparent that both communities and developers are taking a long, hard look at infill development as it is now becoming a feasible alternative to suburban fringe development. Infill can and is being utilized today as an anti-sprawl measure and as an essential tool for growth management practices.

Chapter two explores the concept of infill, noting both the good and bad effects of infilling. The benefits of infill, such as agricultural preservation, energy conservation and neighborhood enhancement are explored as well as the trends that are today emerging that encourage infilling, markets that favor infill, as well as the constraints that face infill are also discussed.

Chapter four reviews four selected infill projects that have been completed in recent years in Manhattan, Kansas. These selected PUD sites exemplify how the ordinance can be utilized to achieve infilling.

Chapter five explores a number of techniques and tools that might be utilized for the improvement of infilling potentials. Some of the techniques discussed in this chapter include the removal of governmental obstacles, the creation of neighborhood support, increasing the amounts of available land and the correction of site specific problems.

Chapter six concludes the paper with a number of suggestions of what the City of Manhattan might do in order to make infilling a more viable development alternative, including the streamlining of land use regulations and the creation of infill districts. The potentials for infill development are becoming great as growth management practices gain support and communities are becoming aware of the benefits of infill development.